



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,460	12/31/2003	Martin Mitchell Zentner	9D-DW-25158	4979
7590 12/19/2008				
John S. Beulick Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102				
EXAMINER CHAUDHRY, SAEED T				
ART UNIT 1792		PAPER NUMBER		
MAIL DATE 12/19/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/750,460

Applicant(s)

ZENTNER ET AL.

Examiner

Saeed T. Chaudhry

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 23, 2008 has been entered.

Claim Rejections - 35 USC § 112

Claims 14-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 is confusing and indefinite since it is not clear how the amount of water in the third dishwashing cycle is determined. What is done to the retained first and retained second total amount of additional water? These amount are subtracted, added or a averaged to determine a second amount of water to deliver to the dishwasher for a third cycle.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gadini in view of Warren, Jr. et al. and Mirdadian.

Gadini (6,823,878) discloses a dishwasher having a wash chamber and a turbine flow meter for metering water inside the tub. A washing machine consists of a generic dishwasher, whose tub 101 has wash fluid spraying means, which are represented by two known rotary spraying arms 102 and 103; reference 104 indicates a wash pump for picking up the wash liquid from the tub bottom 101 and convey it through an appropriate duct 105 to the arms 102 and 103.

The precise metering of the softened water inside the tub 101, with the relevant closure of the valves 109, VA, 112 and 114, can be obtained with any known technique, for example through the use of a standard pressure-switch or turbine flowmeter, or by means of metering tanks or dosing containers for the wash water of known type and operation (see col. 15, lines 8-14 and col. 17, lines 55-60).

The machine control system will only provide for the opening of the valves 9 and 20, to let a predetermined amount of water to enter the hydraulic circuit of the machine, substantially equal to the amount of water required for filling the tanks 17 and 26, the duct 8 downstream the tank 26, the decalcifier 10, the duct 19 and the length of the duct 12 being upstream the valve 13; the value of such an amount of water is properly coded within suitable memory means of the machine control system (in the specific instance, an electronic control system).

The achievement of the above predetermined volume is detected by the flow sensor 27, which is connected to an appropriate input of the electronic control system; in other words, the

control system will compare the gradually increasing value signaled by the sensor 27, and compare it with the preset value stored in the control system itself. When the two values coincide, the control system provides for closing the valves 9 and 20 (see col. 10, lines 21-39).

Once the tanks 17 and 26 are filled as described above and the valves 9 and 20 closed, the machine control system provides for opening the valve 13 alone, so as to discharge all water contents of the tank 26, the duct 8, the decalcifier 10 and the lengths of duct 12 and 19 upstream the valves 13 and 20 into the tub 1.

Thereafter, the control system provides for opening the valve 9 and maintain the valve 13 open to allows a further water supply from the main, which will flow in the tank 26, the duct 8, the decalcifier 10, the duct 12 and then reach the tub 1 (see col. 10, lines 55-65).

According to this application, a second water quantity value is coded in the memory means of the control system; this value substantially corresponds to the difference between the total amount of water to be supplied to the tub and the amount of water available in the tank 26, in the duct 8 downstream the tank 26, in the decalcifier 10 and in the lengths of ducts 12 and 19 upstream the valves 13 and 20.

Consequently, being the valves 9 and 13 open, the control system compares the gradually increasing value signaled by the sensor 27, and compares it with the said second value stored in the control system itself. When the two values coincide, the control system appropriately closes the valves 9 and 13, since the necessary amount of water has been supplied to the tub 1 (see col. 11, lines 1-12). Further, the claimed turbine ratemeter is equivalent to turbine flowmeter of Gadini since both are measuring volume of liquid. The reference fails to disclose a water supply line having a first diameter and a restrictor tube having a second diameter.

Warren, Jr. et al (5,878,603) disclose a washer having a water supply line (22) in flow communication with a wash chamber (18) having a first diameter, a valve configured to deliver water from the water supply line into the wash chamber; and a restrictor tube (50) in flow communication with the chamber having a second diameter smaller than the first diameter water supply line (see col. 1, line 56 to col. 4 line 19 and figs. 1-2).

Mirdadian (4,120,032) discloses a conventional flowmeter which may be a turbine meter or positive displacement meter capable of measuring and indicating an amount of fluid moving through a pipeline. In this system the flow meter generates an electrical square wave pulse representative of the passage of a known incremental volume of fluid (see col. 4, lines 53-68).

It would have been obvious at the time applicant invented the claimed dishwasher to include a restrictor tube for supplying the liquid to the chamber as disclosed by Warren, Jr. et al into the apparatus of Gadini for the purpose of reducing the noise of water being delivered to the chamber. Further, it is known in the art for generating square wave pulse by flowmeter as disclosed by Mirdadian. Therefore, one of ordinary skill in the art would have used a flow meter which produces square wave pulse for measuring volume of water in the apparatus of Gadini.

Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gadini in view of Whipple, III et al, Warren, Jr. et al. and Mirdadian.

Gadini, Warren, Jr. et al and Mirdadian were discussed supra. However, the references fail to detect cavitation of a pump.

Whipple, III et al (5,330,580) disclose a dishwasher having a wash chamber; a pump motor configured to pump liquid into the wash chamber and a controller coupled to the motor to detect a cavitation of the pump.

A dishwasher for cleansing food handling items with a liquid comprising: a frame for containing food handling items to be cleansed; means for providing a liquid to said frame; a circulation pump for distributing said liquid in said frame; a motor coupled to said pump; a sensor for detecting power consumption surges in said motor as said frame receives said liquid; and a controller, responsive to said sensor, for controlling said liquid providing means, said controller comprising a microprocessor incorporating a fuzzy-logic feedback control algorithm adapted to process an elapsed time for distributing said liquid, an amplitude of the power consumption surges and an average slope of the power consumption surges to control said liquid providing means. Wherein said motor comprises an alternating current motor having an alternating voltage with a first phase in which the alternating current has a second phase; said sensor for detecting power consumption surges being capable of measuring the magnitude of the difference between said first phase and said second phase (see claims 1-6). The reference fails to disclose a turbine ratemeter.

It would have been obvious at the time applicant invented the claimed dishwasher to incorporate sensor for detecting cavitation in the pump as disclosed by Whipple, III, et al into the dishwasher of Gadini to increase the efficiency of the dishwasher since Whipple III, et al disclose that variation in the amount of liquid needed to satisfactorily clean varying amounts of soiled articles. Further, Gadini discloses to store the predetermined value of liquid and second value of liquid. Therefore, one of ordinary skill in the art would configured the controller with the pump to detect the cavitation as disclosed by Whipple III, et al to store the values of the liquid before the cavitations and after the cavitations. Gadini discloses a controller which is capable of storing and delivering the liquid to the wash chamber. Therefore, one of ordinary skill

in the art would manipulate the controller of the Gadini to deliver the liquid after the power lose as these vales are stored in the controller. Further, one of ordinary skill in the art would include a restrictor tube as disclosed by Warren, Jr. et al into the apparatus of Gadini for the purpose of reducing the noise of water in the water fill period.

Response to Applicant's Arguments

Applicant argued that Gadini does not describe or suggest a controller in signal communication with the turbine ratemeter, wherein the controller is configured to close a valve when a predetermined number of pulses have been received from the turbine ratemeter such that a predetermined quantity of water is supplied through the valve.

This argument is not persuasive because Gadini discloses the precise metering of the softened water inside the tub 101, with the relevant closure of the valves 109, VA, 112 and 114, can be obtained with any known technique, for example through the use of a standard pressure-switch or turbine flowmeter, or by means of metering tanks or dosing containers for the wash water of known type and operation (see col. 15, lines 8-14 and col. 17, lines 55-60). The machine control system will only provide for the opening of the valves 9 and 20, to let a predetermined amount of water to enter the hydraulic circuit of the machine, substantially equal to the amount of water required for filling the tanks 17 and 26, the duct 8 downstream the tank 26, the decalcifier 10, the duct 19 and the length of the duct 12 being upstream the valve 13. Therefore controller open and closes valves for predetermined amount of water through the turbine flowmeter and Mirdadian suggests an electrical square wave pulse representative of the passage of a known incremental volume of fluid. Therefore, one of ordinary skill in the art

would have known that by square waves one can find volume of liquid passed through a pipeline.

The applicant argued that turbine flowmeter described in Gadini is not equivalent to the turbine ratemeter recited in the presently pending claims. Gadini merely describes that a standard flow meter may be used to meter the flow of softening water into a tub. Gadini does not describe or suggest what type of signal that standard turbine flow meter outputs although, in one embodiment, Gadini describes a flow meter sensor that outputs a signal having a gradually increasing value. A signal having a gradually increasing value is not a signal having a plurality of square wave pulses.

This argument is not persuasive because Mirdadian suggests an electrical square wave pulse representative of the passage of a known incremental volume of fluid. Therefore, one of ordinary skill in the art would have known that by square waves one can find volume of liquid passed through a pipeline.

The applicant argued that Mirdadian does not make up for the deficiencies of Gadini. Mirdadian describes a flowmeter that may be any one of a turbine meter, a positive displacement meter, or any other suitable metering or measuring device. Mirdadian does not describe or suggest using a turbine meter in a dishwasher to regulate the amount of water entering the dishwasher.

This argument is not persuasive because Mirdadian is cited for showing that an electrical square wave pulse representative of the passage of a known incremental volume of fluid. Therefore, with the teaching of Mirdadian one of ordinary skill in the art would know how to use square waves for measuring liquid.

The applicant argued that Warren does not describe or suggest a controller in signal communication with a turbine ratemeter, wherein the controller is configured to close a valve that a predetermined number of pulses have been received from the turbine ratemeter such that a predetermined quantity of water is supplied through the valve.

This argument is unpersuasive because Warren is recited to show a restrictor tube (50) in flow communication with the chamber having a second diameter smaller than the first diameter water supply line.

The applicant argued that Gadini does not describe or suggest retaining a second amount of additional water added during a second dishwashing cycle and/or determining a second amount of water to deliver to a dishwasher for third dishwashing cycle subsequent the second dishwashing cycle.

This argument is not persuasive because claimed dishwasher requires measuring additional amount in the first and second cycles, which would be same amounts since the first additional amount and the second additional amount are difference between the first amount delivered amount. Therefore, third amount would be same as of first and second amounts and Gadini discloses to measure and storing the first and second amounts.

Applicant's arguments filed October 23, 2008 have been fully considered but they are not persuasive.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Saeed T. Chaudhry
Patent Examiner

/Michael Barr/
Supervisory Patent Examiner, Art Unit 1792